

CLAIMS

What is claimed is:

1. A method of making a biosensor capable of detecting a molecule, wherein the molecule is a ligand for an olfactory receptor protein, said method comprising the steps of:

- (a) Determining the amino acid sequence of a preselected olfactory receptor protein, the secondary and tertiary structures of said olfactory receptor protein being unknown;
- (b) Comparing the amino acid sequence of said preselected olfactory receptor protein to known amino acid sequences of transmembrane proteins having known secondary and tertiary structures, said known amino acid sequences of said transmembrane proteins being selected from the group consisting of G-protein coupled receptors.
- (c) Selecting at least one of said known amino acid sequences of said transmembrane proteins by determining which of said known amino acid sequences has the highest degree of sequence homology with the amino acid sequence of said preselected olfactory receptor protein;
- (d) Using said selected sequence to approximate the secondary and tertiary structures of said preselected olfactory receptor protein;
- (e) Using said approximated secondary and tertiary structures of said olfactory receptor protein to identify a likely binding domain of said olfactory receptor protein for said ligand;
- (f) Synthesizing a polypeptide having the primary structure of said likely binding domain; and
- (g) Attaching said synthesized polypeptide to the surface of a transducer.